

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
SEMICONDUCTOR ENERGY LABORATORY
CO., LTD.

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PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43bis.1)

Date of mailing (day/month/year)	27.12.2005
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Applicant's or agent's file reference
00000PCT8160

FOR FURTHER ACTION

See paragraph 2 below

International application No. PCT/JP2005/017223	International filing date (day/month/year) 13.09.2005	Priority date (day/month/year) 15.09.2004
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International Patent Classification (IPC) or both national classification and IPC
Int.Cl. **H01L29/786** (2006.01), **H01L21/336** (2006.01), **G02F1/1368** (2006.01)

Applicant
SEMICONDUCTOR ENERGY LABORATORY CO., LTD.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Date of completion of this opinion	25.11.2005
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Name and mailing address of the ISA/JP

Japan Patent Office

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WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2005/017223

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of:
 - ☒ the international application in the language in which it was filed
 - ☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material
 - ☐ on paper
 - ☐ in electronic form
 - c. time of filing/furnishing
 - ☐ contained in the international application as filed
 - ☐ filed together with the international application in electronic form
 - ☐ furnished subsequently to this Authority for the purposes of search
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2005/017223

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability, citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-14	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1-14	NO
Industrial applicability (IA)	Claims	1-14	YES
	Claims		NO

2. Citations and explanations:

D1:JP 2001-281694 A (SEMICONDUCTOR ENERGY LABORATORY CO.,Ltd.)
2001.10.10, Figs.4,6,17,18 (Family: None)
D2:JP 6-202146 A(FUJITSU, Ltd.)1994.07.22, Whole Document (Family: None)
D3:JP 2001-281704 A (SEMICONDUCTOR ENERGY LABORATORY CO.,Ltd.)
2001.10.10, Fig.16 & US 2002/0110941 A1
D4:JP 7-312425 A (HITACHI, Ltd.) 1995.11.28, Fig.3 (Family: None)

Claims1,2,5-14

In the cited document D1,

A semiconductor device, which is a mobile information terminal etc., comprising TFTs having an electrode by stacking a first conductive layer (Ti) in contact with the semiconductor thin film and a second conductive layer (Al) on the first conductive layer. And, the first conductive layer has a portion projected from an end portion of the second conductive layer, wherein ITO, which is for the light-emitting element or the liquid crystal element, is in contact with the portion of the first conductive film.

In the cited document D2,

An electrode, such an art, has a tapered portion in order to securely connect.

Therefore, it is perceived that a person skilled in the art could have easily made the invention by applying the technique of cited document D2 to the semiconductor device of cited document D1.

Claim3,4

In the cited document D3,

A multilayer electrode, wherein a side surface portion of a first conductive layer has a smaller tapered angle than that of a second conductive layer.

In the cited document D4,

A multilayer electrode, wherein a side surface portion of a first conductive layer has a larger tapered angle than that of a second conductive layer.

Therefore, it is perceived that a person skilled in the art could have easily made the invention by applying the techniques of cited documents D2-4 to the semiconductor device of cited document D1.

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